Risk Analysis

Vol. 10, No. 1 **March 1990**

CONTENTS

GUEST EDITORIALS

How Much Cancer Can EPA Regulate Away? 1
Michael Gough

The Problem with the Margin of Safety: Toward the Concept of Protection 7
Bernard D. Goldstein

LETTERS TO THE EDITOR

Three Candidate "Laws" of Uncertainty Analysis 11
Dale Hattis

House Fire: A Source of Dioxins 13
Hari V. Rao and David R. Brown

WORKSHOP ON INDOOR AIR QUALITY

Introduction to the Risk Assessment Workshop on Indoor Air Quality 15
Halûk Özkaynak and John D. Spengler

Assessing Exposures to Environmental Tobacco Smoke 19
Brian P. Leaderer

Risk Assessment Methodologies for Passive Smoking-Induced Lung Cancer 27
James L. Repace and Alfred H. Lowrey

Environmental Tobacco Smoke: Exposure–Response Relationships in Epidemiologic Studies 39
Anna H. Wu-Williams and Jonathan M. Samet

Assessment of Population Exposure and Carcinogenic Risk Posed by Volatile Organic Compounds in Indoor Air 49
Jan A.J. Stolwijk

Major Sources of Exposure to Benzene and Other Volatile Organic Chemicals 59
Lance Wallace

Review of Radon and Lung Cancer Risk 65
Jonathan M. Samet and Richard W. Hornung

Exposure to Formaldehyde in Indoor Air 77
Richard B. Gammage

Quantitative Cancer Risk Estimation for Formaldehyde 85
Thomas B. Starr

ARTICLES

Subjective-Probability-Based Scenarios for Uncertain Input Parameters: Stratospheric Ozone Depletion 93
James K. Hammitt

Bayesian Modeling of Initiating Event Frequencies at Nuclear Power Plants 103
Stephen C. Hora and Ronald L. Iman

Multiobjective Decision-Tree Analysis 111
Yacov Y. Haimes, Duan Li, and Vijay Tulsiani

The Effects of Publication Selection on Test Probabilities and Estimator Distributions 131
Frank T. Denton

Electric-Utility Resource Planning and Decision-Making: The Importance of Uncertainty 137
Eric Hirst and Martin Schweitzer

Mortality Risks Induced by Economic Expenditures 147
Ralph L. Keeney

Desired Risk: Broadening the Social Amplification of Risk Framework 161
Gary E. Machlis and Eugene A. Rosa

Knowledge-Based Representations of Risk Beliefs 169
Bruce E. Tonn, Cheryl B. Travis, Richard T. Goeltz, and Raymond H. Phillippi

SOFTWARE REVIEW

A Program for Calculating Health Risks from Hazardous Waste Incineration 185
Greg D. Belcher and Holly A. Hattemer-Frey

Response from Rowe Research & Engineering Associates, Inc. 188
W. D. Rowe

SOFTWARE LISTINGS 189
Paul D. Moskowitz

BOOK REVIEWS 191
Robin K. White

Risk Analysis

Vol. 10, No. 2 **June 1990**

CONTENTS

GUEST EDITORIALS

Risk Analysis in the 1990s 195
Joseph Fiksel

Risk Analysis: Where Have We Been? Where Are We Going? 197
D. Warner North

Of Apples, Alcohol, and Unacceptable Risk 199
Kenneth T. Bogen

Risk Management Agonistes 201
H. Felix Kloman

LETTERS TO THE EDITOR

Driving Cancer Dose–Response Modeling with Data, Not Assumptions 207
Robert L. Sielken, Jr.

"Underestimation" of Linear Models 209
Colin N. Park

Response to Park 211
John Bailar, Edmund Crouch, Donna Spiegelman, and Rashid Shaikh

ARTICLES

Small Group Studies of Regulatory Decision-Making for Power-Frequency Electric and Magnetic Fields 213
Gordon Hester, M. Granger Morgan, Indira Nair, and Keith Florig

Using Related Samples in Assessing Conformance to Safety Goals: A Nuclear Reactor Safety Application 229
Daniel G. Brooks

Is It Safer to Fly or Drive? 239
Leonard Evans, Michael C. Frick, and Richard C. Schwing

Appraisal of Individual Radiation Risk in the Context of Probabilistic Exposures 247
Hans Bohnenblust and Serge Prêtre

Risk Assessment for Carcinogens Under California's Proposition 65 255
William S. Pease, Lauren Zeise, and Alex Kelter

Priority Topics in the Study of Environmental Risk in Developing Countries: Report on a Workshop Held at the East–West Center, August, 1988 273
Sylvia A. Edgerton, Kirk R. Smith, Richard A. Carpenter, Toufiq A. Siddiqi, Steven G. Olive, Corazon Pe Benito Claudio, Vincent T. Covello, Donald J. Fingleton, Kwi-Gon Kim, and Bruce A. Wilcox

Estimation of the Joint Risk from Multiple-Compound Exposure Based on Single-Compound Experiments 285
James J. Chen, David W. Gaylor, and Ralph L. Kodell

A Simple Formula for Calculating the "Mass Density" of a Lognormally Distributed Characteristic: Applications to Risk Analysis 291
Adam M. Finkel

Pharmacokinetic Principles for Dose-Rate Extrapolation of Carcinogenic Risk from Genetically Active Agents 303
Dale Hattis

Tissue Dosimetry for Reactive Metabolites 317
Curtis C. Travis

Two-Event Model for Carcinogenesis: Biological, Mathematical, and Statistical Considerations 323
Suresh H. Moolgavkar and Georg Luebeck

SOFTWARE REVIEW

A Review of Crystal Ball 343
David E. Burmaster and Edye C. Udell

SOFTWARE LISTINGS 347
Paul D. Moskowitz

BOOK REVIEWS 349
Robin K. White

Risk Analysis

Vol. 10, No. 3 **September 1990**

CONTENTS

GUEST EDITORIALS

Ethical Considerations in Risk Communication Practice and Research 355
M. Granger Morgan and Lester Lave

Presentation of Risk Assessments 359
Fred D. Hoerger

LETTERS TO THE EDITOR

Lead in the Environment: Coming to Grips with Advocacy Versus Scientific Integrity in Risk Assessment 363
Rosalind A. Volpe

On the Use of Risk Assessment in Project Management 365
Fritz A. Seiler

ARTICLES

Risk Perceptions and Food Choice: An Exploratory Analysis of Organic- Versus Conventional-Produce Buyers 367
James K. Hammitt

What Do We Know About Making Risk Comparisons? 375
Emilie Roth, M. Granger Morgan, Baruch Fischhoff, Lester Lave, and Ann Bostrom

Comment: What *Should* We Know About Making Risk Comparisons? 389
Paul Slovic, Nancy Kraus, and Vincent T. Covello

Effects of the Chernobyl Accident on Public Perceptions of Nuclear Plant Accident Risks 393
Michael K. Lindell and Ronald W. Perry

A Robust Measure of Uncertainty Importance for Use in Fault Tree System Analysis 401
Ronald L. Iman and Stephen C. Hora

Dermal Uptake of Organic Chemicals from a Soil Matrix 407
Thomas E. McKone

Associations Between Morbidity and Alternative Measures of Particulate Matter 421
Bart D. Ostro

Comparison of the Cancer Risk of Methylene Chloride Predicted from Animal Bioassay Data with the Epidemiologic Evidence 429
Linda Tollefson, Ronald J. Lorentzen, Robert N. Brown, and Janet A. Springer

Interpretation of Airborne Asbestos Measurements 437
Jean Chesson, Jerry D. Rench, Bradley D. Schultz, and Karen L. Milne

Uncertainties in Pharmacokinetic Modeling for Perchloroethylene. I. Comparison of Model Structure, Parameters, and Predictions for Low-Dose Metabolism Rates for Models Derived by Different Authors 449
Dale Hattis, Paul White, Laura Marmorstein, and Paul Koch

SOFTWARE REVIEW

TECJET: An Atmospheric Dispersion Model 459
Jerry Havens and Tom Spicer

SOFTWARE LISTINGS 461
Paul D. Moskowitz

Risk Analysis

Vol. 10, No. 4 **December 1990**

CONTENTS

EDITORIAL

Background Exposure to Chemicals: What is the Risk? 463
Curtis C. Travis and Sheri T. Hester

LETTER TO THE EDITOR

Communication of Relative Carcinogenic Risks: A Quantitative Approach 467
Seymour J. Garte

ARTICLES

Public Attitude Toward Siting a High-Level Nuclear Waste Repository in Nevada 469
Howard Kunreuther, Douglas Easterling, William Desvousges, and Paul Slovic

The Effect of Risk Beliefs on Property Values: A Case Study of a Hazardous Waste Site 485
Gary H. McClelland, William D. Schulze, and Brian Hurd

Risk Communication, Knowledge, and Attitudes: Explaining Reactions to a Technology Perceived as Risky 499
Richard J. Bord and Robert E. O'Connor

A Methodology for Grouping Source Terms for Consequence Calculations in Probabilistic Risk Assessments 507
Ronald L. Iman, Jon C. Helton, and Jay D. Johnson

Distribution Analyzer and Risk Evaluator (DARE) Using Fault Trees 521
Vijay Tulsiani, Yacov Y. Haimes, and Duan Li

Risk Assessment for Aflatoxin: I. Metabolism of Aflatoxin B_1 by Different Species 539
Nancy J. Gorelick

Risk Assessment for Aflatoxin: II. Implications of Human Epidemiology Data 561
Robert D. Bruce

A Health-Based Approach for Evaluating Soil at Depth Contaminated by Hazardous Waste: Utilizing the $AAL_{\text{soil contact}}$ Criterion 571
Stephen D. Reynolds, Paul W. Hadley, and Richard M. Sedman

Routes of Chloroform Exposure and Body Burden from Showering with Chlorinated Tap Water 575
Wan K. Jo, Clifford P. Weisel, and Paul J. Lioy

Chloroform Exposure and the Health Risk Associated with Multiple Uses of Chlorinated Tap Water 581
Wan K. Jo, Clifford P. Weisel, and Paul J. Lioy

Exposure Assessment: Methods of Analysis for Environmental Carcinogens 587
R.K.M. Jayanty, Max R. Peterson, Dennis F. Naugle, and Michael A. Berry

Connecticut's Dioxin Ambient Air Quality Standard 597
Hari V. Rao and David R. Brown

Letter to the Editor: Pollution as a Terminal Disease? 605
Vlasta Molak

The Fallacy of Ranking Possible Carcinogen Hazards Using the TD_{50} 609
Daniel Wartenberg and Michael A. Gallo

COMMENTS

Measuring Carcinogenic Potency 615
Daniel Krewski

The Importance of Being Quantitative When Crying "Fallacy" 619
Gay Goodman

Assumptions of the HERP Index 623
David G. Hoel

The Importance of Ranking Possible Carcinogenic Hazards Using HERP 625
Lois Swirsky Gold, Leslie Bernstein, and Bruce N. Ames

RESPONSE

A Response to Comments 629
D. Wartenberg and M. A. Gallo

SOFTWARE LISTINGS 635
Paul D. Moskowitz

BOOK REVIEWS 637
Robin K. White